

PATENT APPLICATION TRANSMITTAL LETTER

(Large Entity)

Docket No.

EN999063

TO THE ASSISTANT COMMISSIONER FOR PATENTS

Transmitted herewith for filing under 35 U.S.C. 111 and 37 C.F.R. 1.53 is the patent application of:

P. Fox et al

INVOICE PROCESSING SYSTEM

Enclosed are:

- ☒ Certificate of Mailing with Express Mail Mailing Label No. EL172581356US
- ☒ Three (3) sheets of drawings.
- ☐ A certified copy of a _____ application.
- ☒ Declaration ☒ Signed. ☐ Unsigned.
- ☐ Power of Attorney
- ☒ Information Disclosure Statement
- ☐ Preliminary Amendment
- ☐ Other:

CLAIMS AS FILED

For	#Filed	#Allowed	#Extra	Rate	Fee
Total Claims	9	- 20 =	0	x \$18.00	\$0.00
Indep. Claims	5	- 3 =	2	x \$78.00	\$156.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					\$0.00
BASIC FEE					\$760.00
TOTAL FILING FEE					\$916.00

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Dated: 09/30/99


Signature

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cc: RECORDS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: V. P. Fox et al

Serial No.: N/A

Group Art Unit: N/A

Filed: HEREWITH

Examiner: N/A

For: INVOICE PROCESSING SYSTEM

Assistant Commissioner For Patents
Washington, D.C. 20231

EXPRESS MAIL CERTIFICATE

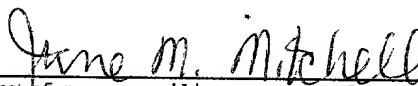
"Express Mail" label number: EL172581356USDate of Deposit: 9/30/99I hereby certify that the following **attached** paper or fee

Post Card
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June M. Mitchell

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NOTE: The label number need not be placed on each page. It should, however, be placed on the first page of each separate document, such as, a new application, amendment, assignment, and transmittal letter for a fee, along with the certificate of mailing by "Express Mail". Although the label number may be on checks, such a practice is not required. In order not to deface formal drawings, it is suggested that the label number be placed on the back of each formal drawing or the drawings be accompanied by a set of informal drawings on which the label number is placed.

APPLICATION
FOR
UNITED STATES LETTERS PATENT

APPLICANT(S) NAME: V. P. FOX ET AL

TITLE: INVOICE PROCESSING SYSTEM

DOCKET NO. EN999063

INTERNATIONAL BUSINESS MACHINES CORPORATION

Certificate of Mailing Under 37 CFR 1.10

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9/30/99
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INVOICE PROCESSING SYSTEM

TECHNICAL FIELD

5
10
15
20
The invention relates to an invoice processing system. In particular it relates to a system for performing a logical three-way match between an invoice, goods received receipts, and purchase orders. The results of the logical matching are then transferred to a database tool containing the goods received receipts and purchase orders.

BACKGROUND OF THE INVENTION

In the process of manufacturing a finished product, various raw materials or parts must be ordered from suppliers, received, and the suppliers paid. In general the party doing the manufacturing will want to minimize the inventory of such goods consistent with a strategy that permits reaction to demand changes and prevents exhausting their supply on hand which could otherwise cause production stoppage. Accordingly, an efficient system for handling the paperwork or electronic documents associated with the ordering, receiving, and paying for goods is needed to permit whatever inventory strategy is needed to operate in a facile manner. When a large number e.g. thousands of different goods must be handled by this system as is typical in many manufacturing industries today, improvements in the operation of the document system can provide significant advantages to a manufacturer.

delivery note. The processing of the invoice prior to receipt of goods must necessarily be handled differently when a GR/IV pricing strategy is used. In particular, based on various accounting rules, no processing is possible with such GR/IV invoices as compared to GR/IR. The necessity of having two invoice processing systems is for large companies costly and error prone. It would therefore be an improvement in the art of invoice processing to be able to process GR/IV invoices in a facile manner and in a manner which utilizes GR/IR processing capability which is usually available and operating effectively in a company.

OBJECTS AND SUMMARY OF THE INVENTION

It is therefore, a principal object of the present invention to enhance the invoice processing art by providing a processing system with enhanced capabilities.

It is another object to provide a method of processing invoices which can be accomplished in a facile manner.

It is yet another object to provide a data processing apparatus with enhanced capability for processing invoices.

It is a further object to provide a computer program product for enhanced processing of invoices.

It is another object to provide computer executable process steps for performing enhanced invoice processing.

These and other objects are attained in accordance with one

embodiment of the invention wherein there is provided an invoice processing system, comprising, entry means for entering and storing invoices, a database tool having one or more goods received receipts and one or more purchase orders, matching tool
5 means coupled to the entry means and the database tool for periodically inquiring the database tool to determine if a new goods received receipt is present, performing a logical three-way match between each invoice, the one or more goods received receipts, and the one or more purchase orders, including
10 generating logical results of the three-way match, and a transfer tool for transferring the logical results from the matching tool means to the database tool, including transferring each stored invoice for which a match was found by the matching tool means.

In accordance with another embodiment of the invention-there is provided a method of processing invoices, comprising the steps of, entering and storing invoices in an invoice processing tool, providing a database tool having one or more goods received receipts and one or more purchase orders, periodically inquiring the database tool to determine if a new goods received receipt is present, performing a logical three-way match between each
15 invoice, the one or more goods received receipts, and the one or more purchase orders including generating logical results of the three-way match, and transferring the logical results from the invoice processing tool to the database tool including
20 transferring each stored invoice for which a match was found by performing the logical three-way match.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG.1 illustrates the elements of one embodiment of the invention;

FIG.2 is a flowchart of the system of the invention; and

FIG.3 illustrates a preferred way to preform a three-way match.

BEST MODE FOR CARRYING OUT THE INVENTION

For a better understanding of the present invention, together with other and further objects, advantages and capabilities thereof, reference is made to the following disclosure and the appended claims in connection with the above-described drawings.

In FIG. 1 there is shown an invoice processing system 10. Entry means 12 and 14 are used for entering and storing invoices 20. The invoice may be received electronically via EDI 850, e-mail, or other electronic connection and entered automatically without manual intervention. It may also be entered manually after receipt in hardcopy form via mail, fax, overnight express or courier delivery. Manual entry may use keyboard, mouse or trackball pointer, touch screen or other methods known in the data processing arts. Invoices 20 are stored in a computer memory which may be an active memory such as DRAM, SRAM, FLASH or EPROM. The invoices may also be stored on a hard disk, floppy disk, CD ROM, DVD or any other storage medium.

Database tool 18 has one or more goods received receipts 22 and one or more purchase orders 24. The database tool may be a computer based software tool having two databases, one for the goods receipts 22 and a second for the purchase orders 24.

5 Database tool 18 may be a custom designed tool appropriate to the company in which it is used, or it may be any commercially available purchasing tool capable of having one or more goods received receipts 22 and one or more purchase orders 24. The SAP, B2B, procurement tool available from the SAP AG Company of Neurottstrasse 16 69190 Waldorf, Germany is one such purchasing tool.

Matching and transfer tool 16 is coupled to both the invoice entry processing tool 14 and database tool 18. It is preferably a software tool which may run on the same processor as either or both tools 16 and 18 but may also run on a separate or remote processor. The matching tool 16 periodically inquires database tool 18 to determine if a new goods received receipt is present.

Matching tool 16 may also comprise specially designed matching hardware or any combination of hardware and software capable of performing a matching function between two or more numbers or variables. In particular, matching tool 16 is capable of performing a three-way match such as will be described below in connection with FIG. 3.

For each invoice for which a match is found, transfer tool 16 transfers the invoice from storage in the invoice entry tool 14 to database tool 18 along with the results of the logical three-way match. Transfer may be done with software read, move, and store instructions in the case where all three tools, the invoice tool, transfer tool, and database tool are running on a shared processor. Transfer may also be done over a communicating connection such as a LAN, telephone line, link, or radio frequency waves, when one or more of the three tools is located remotely. Database tool 18 may then proceed to authorize payment to the vendor or perform other processing tasks well known in the procurement arts.

In FIG. 2 there is shown a flowchart describing the process steps in accordance with another embodiment of the invention. Starting at box 30, invoices are entered and stored in step 32 in an invoice processing tool. Various devices and structures for entering and storing have been described above. The invoice entered may comprise data such as company code, document currency, vendor number, document number, document date, items, and item amounts. In step 34 a database tool having goods received receipts and purchase orders is provided. Such tools are described above. In step 36 the database tool is periodically inquired to determine whether a new goods received receipt is present. If one or more are present, then in step 38 a logical three-way match is performed for each stored invoice. One way of performing a three-way match shown in Fig. 3 is described below. When a match is found, the invoice and logical results are transferred from the invoice processing tool to the database tool in step 40.

In FIG. 3 there is shown a detailed flowchart depicting one way of performing a logical three-way match of step 38 in FIG. 2. The process starts at box 50 after it has been determined that a new GRR is present in the database tool. In step 52, for each invoice, it is determined whether there is one or more GRR's having the same number e.g. delivery note number (#) as the delivery note number on the invoice. Also does the unit price on the GRR(s) equal the unit price specified on the invoice. Finally is the total product quantity on the one or more GRR's sufficient to satisfy the product quantity listed on the invoice. If all three conditions are satisfied, this is the ideal case and the stored invoice is transferred from the invoice processing tool to the database tool in step 40 as previously described. In addition, the logical results indicating all three conditions were satisfied are also transferred.

When handling a large number of orders, receipts, and invoices it frequently happens that not all three conditions are satisfied. In step 54, for example, it is determined that the unit price shown on one or more GRR does not equal the unit price on the invoice, but everything else is satisfied. Unit prices may not match for many reasons including a change in price upward or downward between the time units were shipped by the supplier and the invoice was sent. There may be a clerical error or perhaps a price change was not communicated to all parties at the same time. Whatever, the reason for the unit price difference, the invoice and logical results are again transferred from the invoice processing tool to the database tool in step 40. In this case the logical results will indicate to the buyer in purchasing that a price reconciliation must be performed as is customarily done and the supplier paid.

In step 56, a third pass of the logical three-way notch determines that the number on one or more GRR(s) does not match the number on the invoice however all remaining conditions are satisfied. Again, a transfer of the invoice and logical results is performed in step 40.

In step 58, at least one GRR number and at least one GRR unit price does not match the invoice, however the total product quantity is sufficient to satisfy the quantity indicated on the invoice. In this case the invoice processing tool chooses GRR's by date to satisfy the quantity indicated on the invoice in step 62 and then transfers the invoice and logical results in step 40. The logical results include information on which GRR's were selected in step 62.

Finally, if none of the matches in steps 52, 54, 56 or 58 are satisfied, then the matching tool will loop back and periodically inquire the database tool of determine if a new GRR is present in step 60. In a preferred embodiment, this periodic inquiring may continue for up to 45 days after which the invoice will be removed from the invoice processing tool and returned to the supplier.

While there have been shown and described what are at present considered the preferred embodiments of the invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the scope of the invention as defined by the appended claims.

What is claimed is:

1 1. An invoice processing system, comprising:

2 entry means for entering and storing invoices;

3 a database tool having one or more goods received receipts and
4 one or more purchase orders;

5 matching tool means coupled to said entry means and said database
6 tool for periodically inquiring said database tool to determine
7 if a new goods received receipt is present, performing a logical
8 three-way match between each said invoice, said one or more goods
9 received receipts, and said one or more purchase orders,
10 including generating logical results of said three-way match; and

11 a transfer tool for transferring said logical results from said
12 matching tool means to said database tool, including transferring
13 each said stored invoice for which a match was found by said
14 matching tool means.

1 2. The invoice processing system of claim 1, wherein said entry
2 means comprises means for electronic entry.

1 3. The invoice processing system of claim 2, wherein said entry
2 means further comprises means for electronic entry via EDI 850
3 protocol.

1 4. The invoice processing system of claim 1, wherein said
2 database tool is SAP.

1 5. The invoice processing system of claim 1, wherein said logical
2 three-way match is performed by comparing a GRR number on each
3 said invoice with a GRR number on said one or more GRR, a unit
4 price on said one or more GRR with a unit price on each said
5 invoice, and a quantity on each said invoice with a quantity on
6 said one or more GRR, and wherein an equal comparison of either
7 said GRR number or said unit price, or said quantity shall
8 constitute said match was found.

1 6. A method of processing invoices, comprising the steps of:

2 entering and storing invoices in an invoice processing tool;

3 providing a database tool having one or more goods received
4 receipts and one or more purchase orders;

5 periodically inquiring said database tool to determine if a new
6 goods received receipt is present, performing a logical three-way
7 match between each said invoice, said one or more goods received
8 receipts, and said one or more purchase orders including
9 generating logical results of said three-way match; and

10 transferring said logical results from said invoice processing
11 tool to said database tool including transferring each said
12 stored invoice for which a match was found by performing said
13 logical three-way match.

1 7. A data processing apparatus for processing invoices, said
2 apparatus comprising;

3 means for entering and storing invoices in an invoice processing
4 tool;

5 means for providing a database tool having one or more goods
6 received receipts and one or more purchase orders;

7 means for periodically inquiring said database tool to determine
8 if a new goods received receipt is present, performing a logical
9 three-way match between each said invoice, said one or more goods
10 received receipts, and said one or more purchase orders including
11 generating logical results of said three-way match; and

12 means for transferring said logical results from said invoice
13 processing tool to said database tool including transferring each
14 said stored invoice for which a match was found by performing
15 said logical three-way match.

16 8. A computer program product for processing invoiced, said
17 computer program product comprising;

18 a computer readable medium;

19 first program instruction means for entering and storing invoices
20 in an invoice processing tool;

21 second program instruction means for providing a database tool
22 having one or more goods received receipts and one or more
23 purchase orders;

24 third program instruction means for periodically inquiring said
25 database tool to determine if a new goods received receipt is
26 present, performing a logical three-way match between each said
27 invoice, said one or more goods received receipts, and said one
28 or more purchase orders including generating logical results of
29 said three-way match;

30 fourth program instruction means for transferring said logical
31 results from said invoice processing tool to said database tool
32 including transferring each said stored invoice for which a match
33 was found by performing said logical three-way match; and wherein
34 all said program instruction means are recorded on said medium.

1 9. Computer executable process steps operative to control a
2 computer, stored on a computer readable medium, for processing
3 invoices, comprising;

4 a step to enter and store invoices on an invoice processing tool;

5 a step to provide a database having one or more goods received
6 receipts and one or more purchase orders;

7 a step to periodically inquire said database tool to determine if
8 a new goods received receipt is present, perform a logical
9 three-way match between each said invoice, said one or more goods
10 received receipts, and said one or more purchase orders including
11 generating logical results of said three-way match; and

12 a step to transfer said logical results from said invoice
13 processing tool to said database tool including transferring each
14 said stored invoice for which a match was found by performing
15 said logical three-way match.

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ABSTRACT

INVOICE PROCESSING SYSTEM

Invoices for goods purchased under a pricing strategy of goods receipt base invoice verification are processed. A matching tool performs a logical three-way match between invoices, and a database tool having goods received receipts and purchase orders. A transfer tool sends the invoices and results of the three-way match to the database when a match is found.

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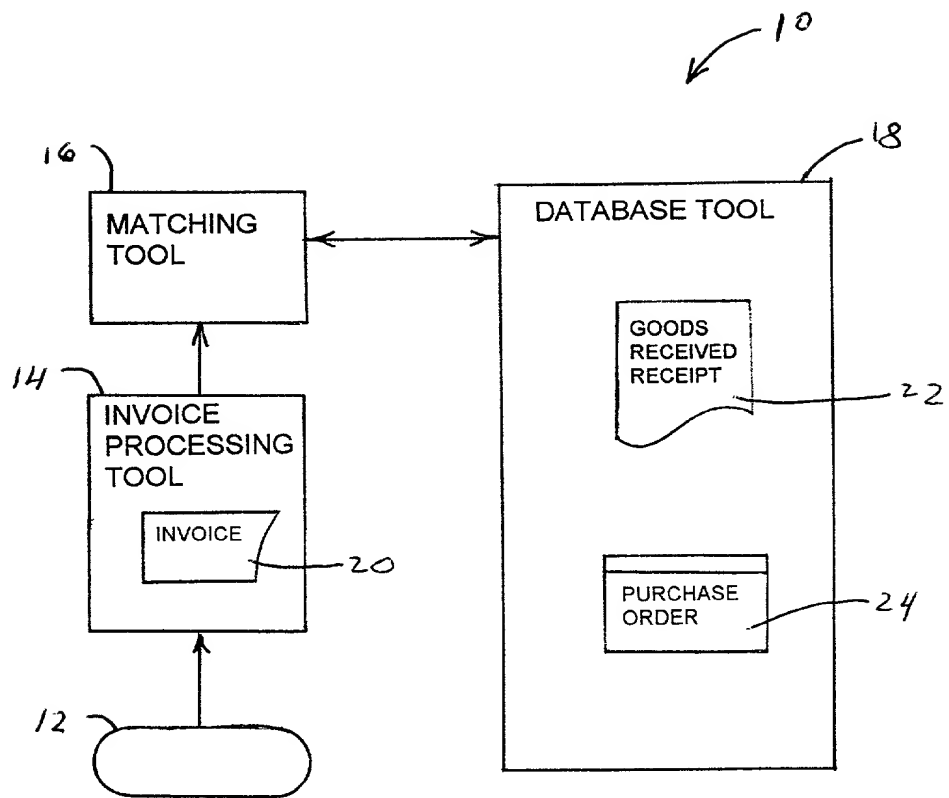


FIG. 1

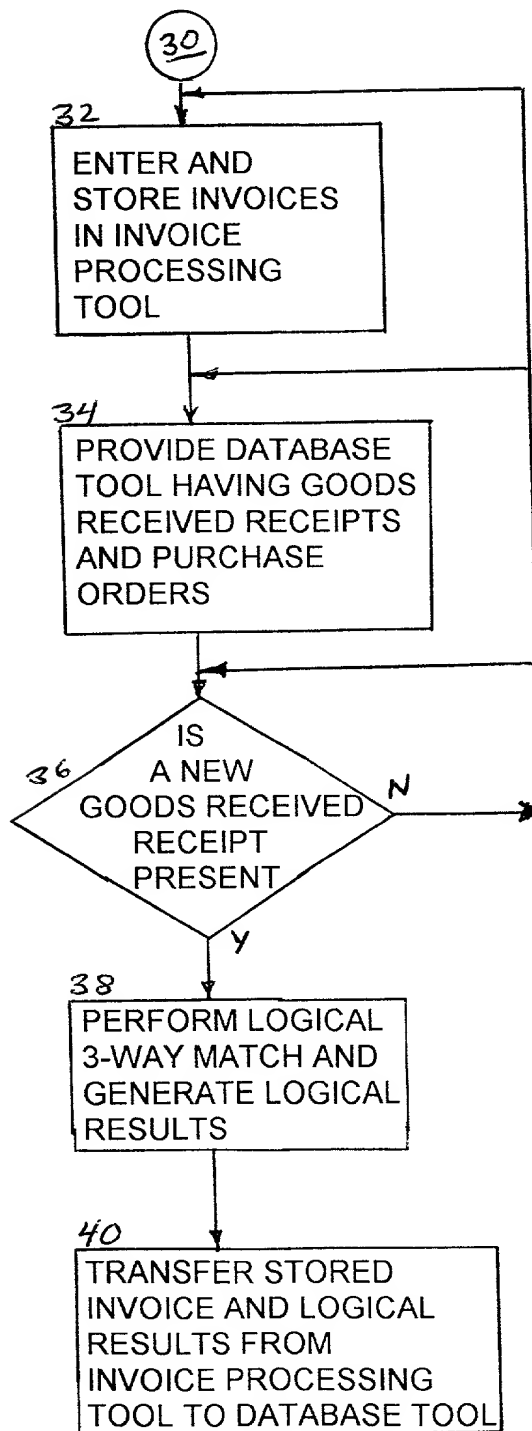


FIG. 2

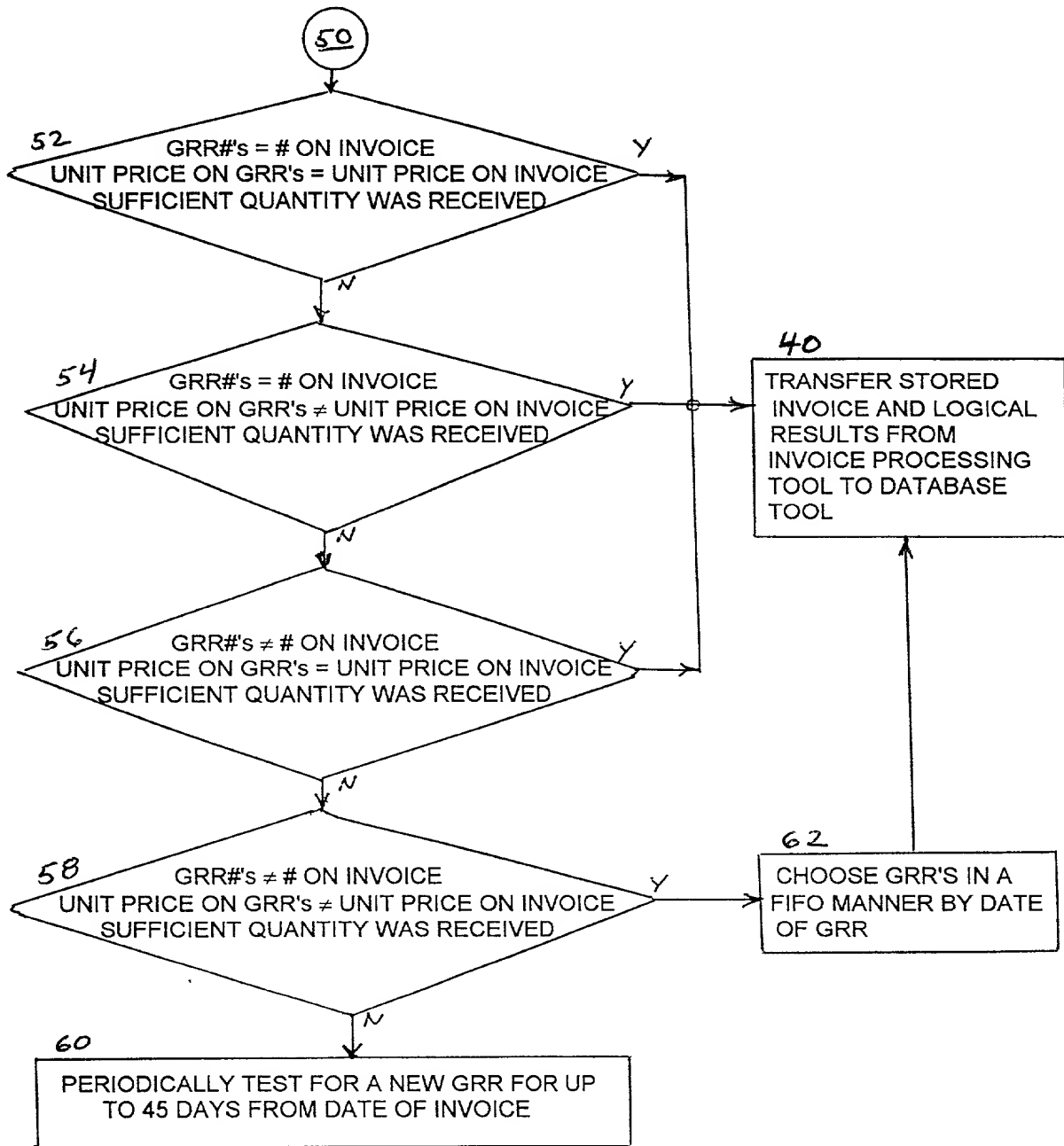


FIG. 3

Docket No.
EN999063

Declaration and Power of Attorney For Patent Application

English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

INVOICE PROCESSING SYSTEM

the specification of which

(check one)

☒ is attached hereto.

☐ was filed on _____ as United States Application No. or PCT International Application Number _____ and was amended on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Priority Not Claimed

NONE

(Number)

(Country)

(Day/Month/Year Filed)

☐

(Number)

(Country)

(Day/Month/Year Filed)

☐

(Number)

(Country)

(Day/Month/Year Filed)

☐

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

NONE	
_____	_____
(Application Serial No.)	(Filing Date)
_____	_____
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_____	_____
(Application Serial No.)	(Filing Date)

I hereby claim the benefit under 35 U. S. C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

NONE		
_____	_____	_____
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
_____	_____	_____
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
_____	_____	_____
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

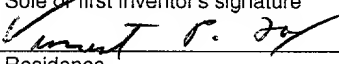
POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

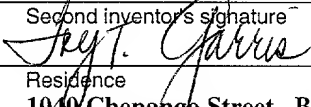
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Third inventor's signature 	Date 9-30-1999
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Full name of fourth inventor, if any	
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Fifth inventor's signature	Date
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Full name of sixth inventor, if any	
Sixth inventor's signature	Date
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